

Implementation of Remote Desktop Utility using Teamviewer

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Abstract: This paper emphasize on remote desktop utility and its applications. One of the remote desktop utility Teamviewer is explained. Its features are discussed. Implementation in real life has been included in the paper. At the end the RDP (remote desktop protocol) architecture and its layer configuration has been discussed in this paper.

Keywords- VNC Architecture, Teamviewer, RDP

I. INTRODUCTION

The paper presents a remote-desktop based on remote debugging model for the situation that hardware programming experiment is not often conducted in the network innovation experiment and teaching. It allows researchers to operate remotely, which is a kind of open source hardware network study experiment platform, using the remote-desktop key technology. Additionally, preliminarily implemented the remote debugging platform based on this model and verified the key technology of the remote-desktop connection. Remote Desktop has also been known as “Terminal Services”. This paper will use Remote Desktop and Terminal Services interchangeably. Remote Desktop Protocol (RDP) is the protocol used for remote desktop connections. The work of this paper has an important guiding significance for the network innovation experiment and teaching[1].

Remote desktop controlling provides remote support, remote access and online meeting software that the world relies on. Over more than billion installations users are using this technology. More than twenty million devices can be online at any time using this technology. This system makes use of Virtual Network Computing VNC. VNC is platform-independent. VNC is a viewer on any operating system and can usually connect to a VNC server on any other operating system. There is a server in Java that can be used to communicate to any operating system. This system can be used for remote technical support and getting access to files on remote computer. [1]

II. VIRTUAL NETWORK COMPUTING (VNC) ARCHITECTURE

While developing the system, portability is the main aim. To achieve this, the architecture is proposed as shown in fig. 1. A VNC based architecture. VNC is an implementation of a remote display system based on a Remote Frame Buffer (RFB) protocol. [2]

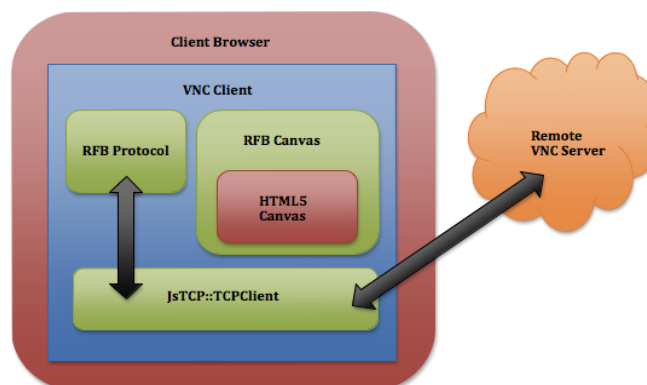


Fig. 1 Architecture of VNC

The architecture consists of VNC servers running on one or more remote computers, a Smart VNC (SVNC) proxy, and a SVNC viewer on mobile. A VNC server sends a remote desktop display as bitmap images using a protocol RFB. A SVNC proxy converts this display image into image to a SVNC viewer in response to a

user request that is received from the SVNC viewer. The SVNC viewer displays the transferred images. Key events received by the SVNC viewer are transmitted to a SVNC proxy that converts and sends them to the server. When the user first tries to connect to a remote computer, he must specify his user name and password for authentication as well as the host name of the computer that is running a VNC server.[3] If authentication succeeds, the SVNC proxy establishes a session with the VNC server and the SVNC viewer starts user services. Usually, color display images are transferred from the SVNC proxy to the SVNC viewer. However, while the user is manipulating the remote desktop, such as scrolling and moving the pointing device, the display images are gray scaled to reduce the number of bytes required to encode the image. [4]

III. TEAMVIEWER

A software package for any situation which combines various applications in one cost-effective solution is Teamviewer software. It provides instant remote support. No need for any installation on the client side. It provides remote maintenance that is access to remote computers and servers. Remotely access the data and applications anytime, anywhere. It is a Home office. Access office computer from home. The software also provides meetings and Presentations. Online meetings can have up to 25 participants. Presentations boost sales potential. Training session. Cut costs by conducting training online. Team work collaborates online on documents in real-time.

3.1 Features of teamviewer -

- Save time and money - Support, assist, interact, and collaborate with people. Helps in exchange information. The tool makes it possible to work as if all are in the same room without travel time and expenses
- Secure and powerful - It enables us to do what we want without any hassle and without any worries. Private data, private conversations, and private meetings can be conducted.
- Quickly and securely connect to devices all over the world without the need for a VPN. It utilizes RSA 2048 public/private key exchange, AES (256 bit) session encryption end to end, random passwords for one-time access, optional two-factor authentication, and access controls via black- and whitelists.
- Multi-platform - Cross-platform PC to PC, mobile to PC, and PC to mobile connections that support Windows, Mac OS, Linux, Chrome OS, iOS, Android, Windows App, and BlackBerry.
- Maximum compatibility - Teamviewer runs on a broad spectrum of operating systems ranging from state-of-the-art system software to older operating systems.
- No configuration - Start and use Teamviewer instantly. Teamviewer even works behind firewalls and automatically detects any proxy configuration.
- High performance - Intelligent connection and routing, efficient use of bandwidth, fast data transmissions, and automatic quality adjustments ensure an optimized user experience.
- Automatic discovery - Automatically discover nearby contacts and devices to make collaboration and interaction even easier.
- Integrated monitoring checks - by assigning a device to Teamviewer account, Teamviewer sends alerts regarding disk space, Windows updates, antivirus protection, and Windows firewall.
- User & device management - Add users and devices to your company (license) and assign rights. Share groups. Manage devices with policy-based settings, or enable secure access controls to connect to devices without the need for a password.
- Setting policies - Create setting policies, distribute them, and enforce them if necessary. Any changes to setting policies are automatically applied to the assigned devices.
- Channel groups - Create separate channel groups within the license and assign users to them to ensure that specific teams always have access to the channels they need.
- Chat - Instant messaging functionality includes group chats, web-based chats, offline messaging, chat history, persistent chat groups, full support for mobile devices, and end-to-end encryption.
- File transfer - Share files of any size using convenient methods such as a file manager, contextual menus, drag & drop, and a file box that can link to cloud storage providers.
- Whiteboard - During remote control or meeting sessions, use a whiteboard that includes numerous shapes, pens, markers, and a speech bubble.
- Remote audio and video - Hear music, sound system, videos from the remote computer during a connection.
- High-definition VoIP - Enjoy the clarity of high definition audio quality with automatic noise reduction and echo cancellation during Voice over IP transmissions.

- Session recording - Record remote control or meeting sessions (including sound, Voice over IP, video, and webcam images) with simple conversion into the AVI video format.
- It provides Ultra-high definition by means of intelligent scaling, for both remote control and meeting sessions.
- Terminal server support - In a terminal server environment, a separate ID is optionally generated for every user, which allows them all to use Teamviewer simultaneously and independently.
- Open multiple connections simultaneously and use tabs to switch conveniently between them.
- Work environment - It supports user account control (UAC), direct LAN connections via TCP/IP, and a true virtual private network (VPN) channel – in addition to pure desktop sharing.
- Restart remote computer - Restart the remote computer with automatic subsequent reconnection – even in safe mode.
- Remotely update or install – the software can be remotely updated and installed.
- Remote printing - Conveniently print documents from the remote computer to local printer. Locally installed printers are automatically detected by Teamviewer.
- Synchronous clipboard- Copy and paste files, images, and text from one computer to another via the clipboard.
- Special keys- Easily send special key combinations to the remote device (e.g. Ctrl+Alt+Del) even if you're using a completely different operating system such as on a mobile device.
- Black screen - Make the remote computer monitor dark if you do not want anyone to watch while you are accessing a remote device.
- Multi-monitor support- Navigate easily between multiple monitors. Display multiple remote screens simultaneously on your local screens (e.g. two windows for two monitors).
- Save connection settings- Save individual connection settings for all future connections to the same computers by group, contact, or computer.
- Service queue- All service cases are collected in a service queue and identified based on a session code that can then be prioritized and organized in your team.
- Work together- Invite any partner or expert into a current remote control session and solve problems together. Also change directions by reversing the viewing direction during any ongoing session.
- Comprehensive reporting- Built in reporting features log connections for who did what, when, and for how long. This can serve as the basis for precise billing. Also take advantage of session commenting capabilities and customer feedback forms.
- Connect to mobile devices- Remotely connect to Android (with real-time remote control and unattended access possible) and iOS devices to see installed apps and running processes, push & pull settings, and view important device metrics.
- Scheduling-Schedule, organize, and send invitations to your meetings. Set up your online meetings directly in your Outlook calendar via the integrated Teamviewer button.
- Rights management-Rights management allows differentiation between organizer, presenter, and participants. Different presenters can be designated and changed during a meeting.
- Effectively communicate-Communicate interactively and effectively via chat, VoIP, video, and telephone conference. Individually set the level of interaction among participants.
- Access control-Start meetings without participants for optimal preparation. Use the door lock to provide additional access control of invited participants.
- Screen sharing-Share your screen at any time or select only the window of a particular application to share. Escalate chats or video calls into full presentations by sharing your screen at any time.

IV. REMOTE DESKTOP PROTOCOLS (RDP)

Remote desktop protocol (RDP) is a protocol for exchanges between terminal servers and their Windows OS clients. It is based on International Telecommunication Union (ITU) standards. RDP is based on the standards of the T.120 protocol family, especially on T.125 Multipoint Communication Service Protocol Specification (MCS) and T.128 Application Sharing. RDP is also strongly aligned with communication mechanisms that were already in use for data exchange under Microsoft NetMeeting. Any device can be a client as long as it has an output medium, a mouse, and a keyboard. It also needs to be able to communicate over the network using RDP. Further intelligence is not needed on the client side. The currently available Microsoft RDP clients support only Windows CE, the 32-bit and 64-bit Windows operating systems, an ActiveX control element for Microsoft Internet Explorer, and Apple Mac OS X. [5]

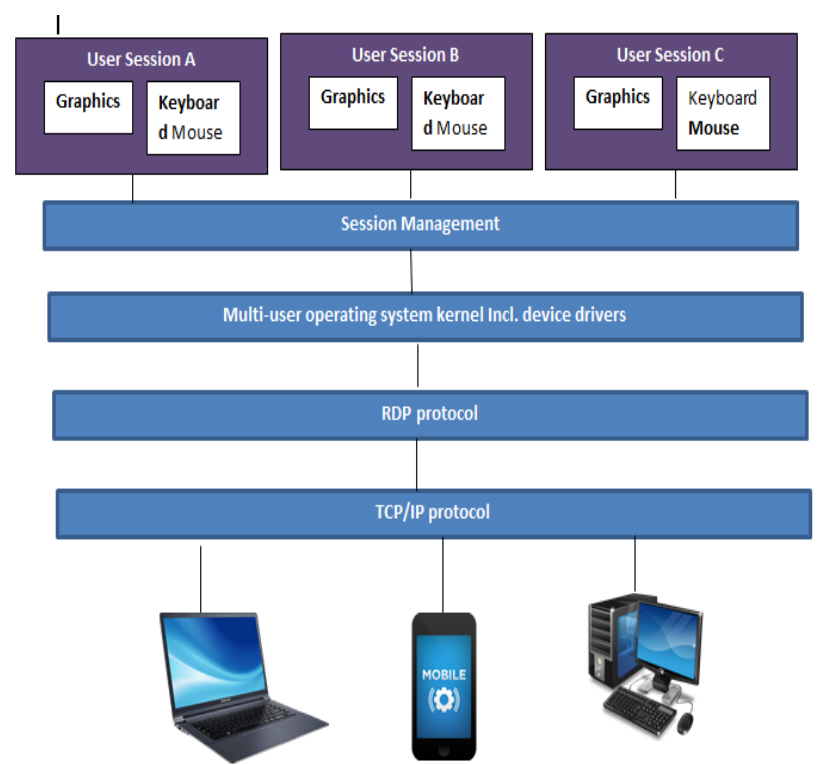


Fig 2. Remote Desktop protocol

V. CONCLUSION

Remote Desktop application provides remote connectivity with other devices such as laptop, mobile phone or other desktops. It is helpful to provide solutions to the problems faced by remote user. Thus it becomes basic need of the user. Now the world is just on a touch of a key. More innovation in developing protocols are required that provides new features.

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